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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

JUN 14 1993

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of:

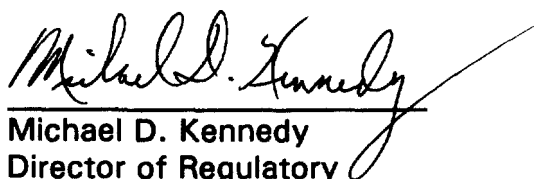
PR Docket No. 93-60  
RM-8028

Co-Channel Protection  
Criteria for Part 900,  
Subpart S Stations  
Operating Above 800 MHz

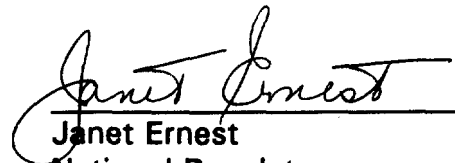
**COMMENTS OF MOTOROLA, INC.**

Motorola, Inc. ("Motorola") herewith submits its comments in the above-captioned docket concerning co-channel protection criteria for 800/900 MHz Private Land Mobile Radio systems. Motorola is simultaneously filing joint comments supporting the Commission's Notice in conjunction with the National Association of Business and Educational Radio, the International Telecommunications Association, and the American Mobile Telecommunications Association and urges the Commission to adopt rules consistent with those comments. Motorola is also filing individually to emphasize the need for interference protection standards that maintain the high quality of service that users now expect.

Respectfully Submitted By:

  
Michael D. Kennedy  
Director of Regulatory

Relations  
Motorola, Inc.  
1350 Eye Street, N.W.  
Suite 400  
Washington, D.C. 20005  
(202) 371-6900

  
Janet Ernest  
National Regulatory

Relations Administrator  
Motorola, Inc.  
1350 Eye Street, N.W.  
Suite 400  
Washington, D.C. 20005  
(202) 371-6900

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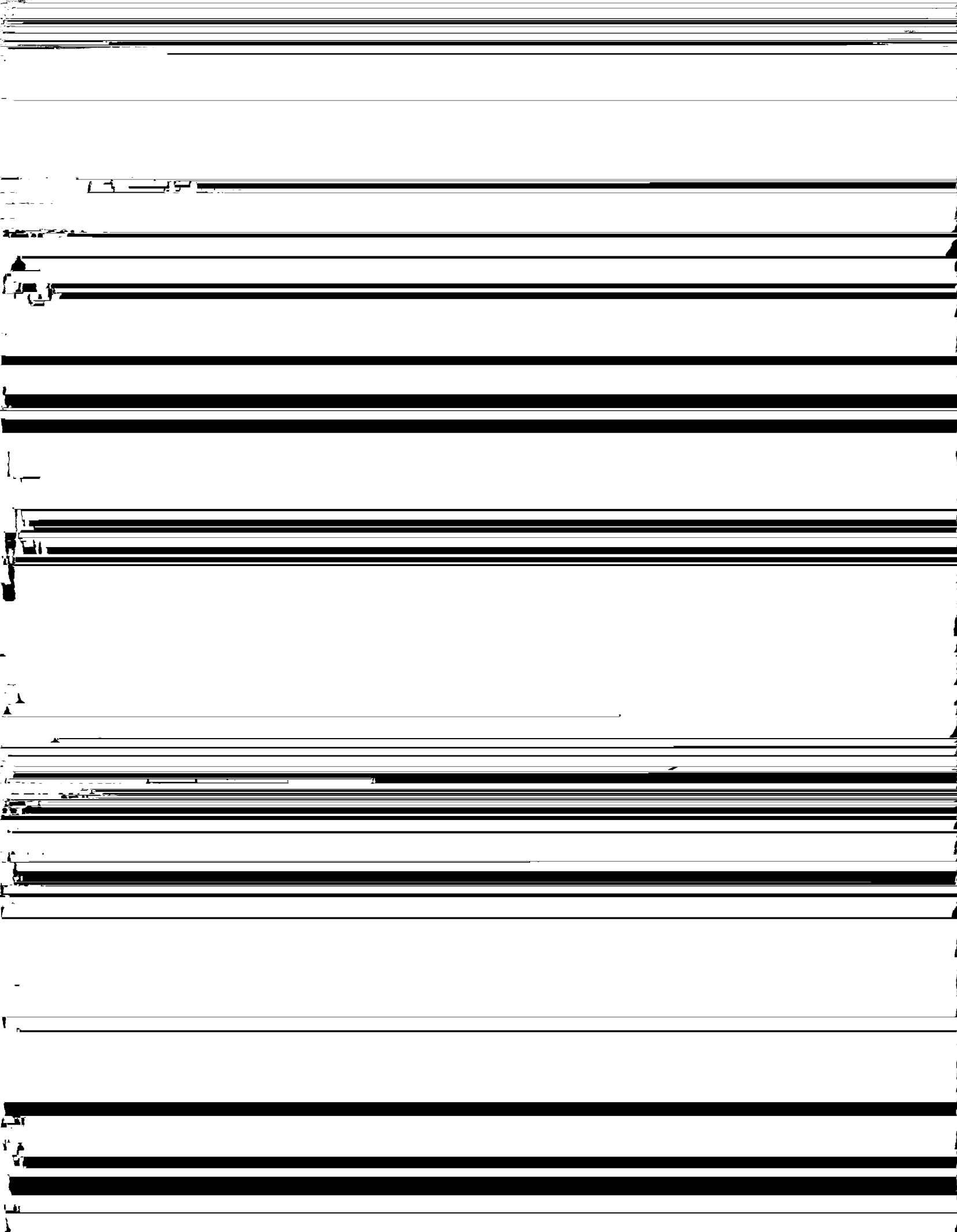
**THE COMMISSION MUST ENSURE THAT ITS TECHNICAL ASSIGNMENT STANDARDS PROVIDE PRIVATE LAND MOBILE USERS WITH THE SAME HIGH QUALITY OF SERVICE THAT THEY NOW EXPECT AND ENJOY**

In this Notice,<sup>1</sup> the Commission's major proposals include revising the protection criteria and distance separations for co-channel stations operating above 800 MHz in all Part 90, Subpart S, service pools. Motorola has jointly filed extensive comments addressing these issues in conjunction with the National Association of Business and Educational Radio, the International Telecommunications Association and the American Mobile Telecommunications Association. Basically, those Joint Comments state that with appropriate modifications, the policy framework advanced by the Commission will better promote the efficient, interference-free use of the private land mobile spectrum above 800 MHz.

Motorola is separately filing these instant comments to caution the Commission that although the Joint Comments proposals are a good first step, they may prove insufficient to maintain the quality of service that customers now enjoy. Given the changing RF environment of the private land mobile services, there are complex and rapidly evolving factors affecting the proper operation of these stations that the joint commenters were unable to address during the short period of time allowed to prepare comments. As further explained below, Motorola

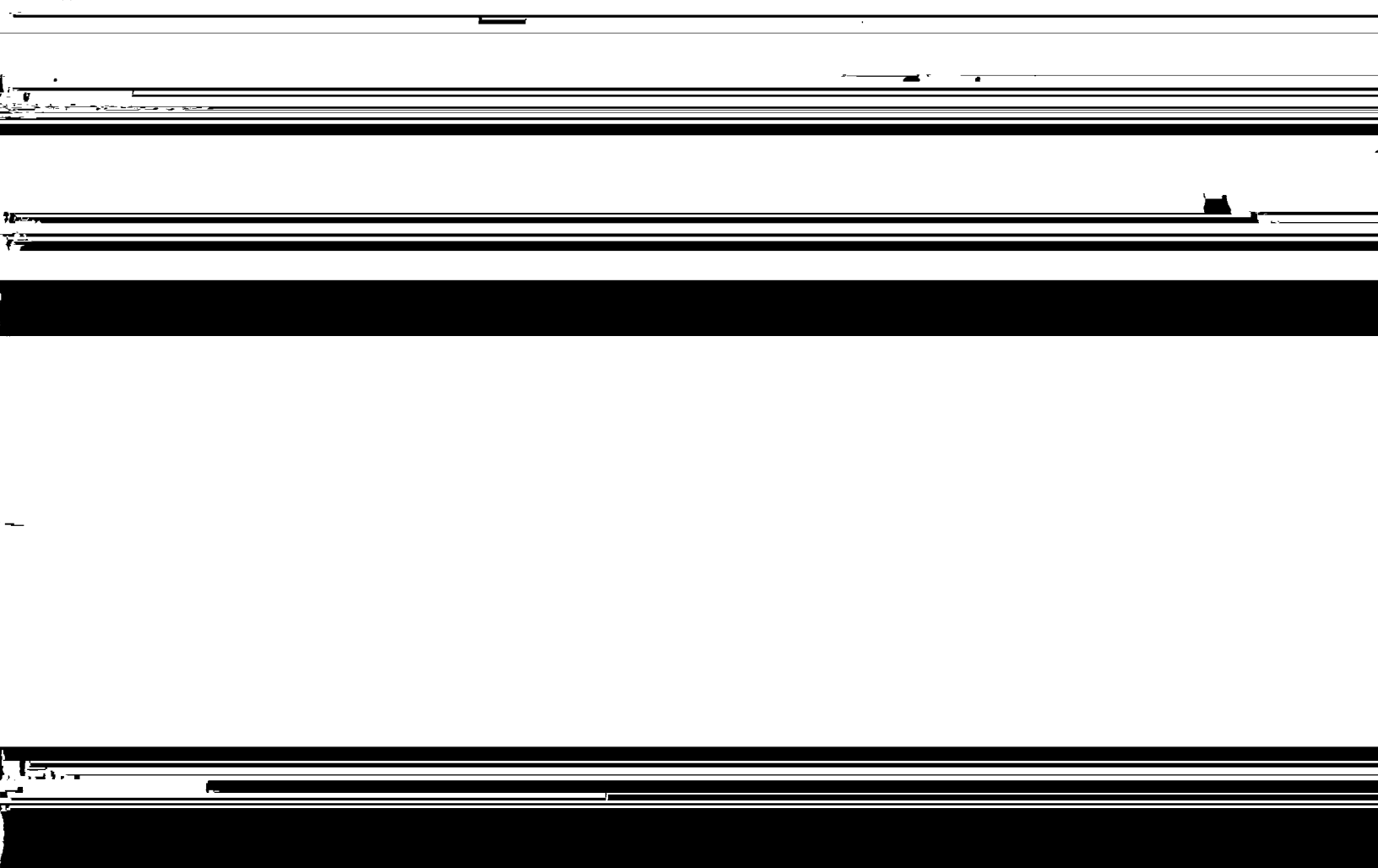
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<sup>1</sup> Co-Channel Protection Criteria for Part 90, Subpart S Stations Operating Above 800 MHz, RM 8028, FCC 91-140 (released Apr. 7, 1993) ["Notice"].



Comments. In particular, the Joint Comments recommend the use of a 40/22 dBu protection standard with both contours calculated using the curves designed for predicting coverage at 50 percent of the locations at 50 percent of the time, i.e., the F(50,50) curves. Without reiterating the justification of this proposal, its adoption will go far in providing existing facilities with a high quality of service while at the same time allowing for new stations even at separations far less than 70 miles. Nonetheless, further refinements of the technical assignment standards will likely be necessary.

In particular, the R-6602 curves can be a useful predictor of land mobile coverage when properly applied. However, in the Notice, the Commission appropriately recognizes that "R-6602 curves are based upon average terrain



stations, propagation prediction has become significantly more advanced and computer programs are now readily available to licensees that provide for more accurate contours than the R-6602 curves as currently applied by accounting for localized terrain conditions and by using alternative algorithms to model radio propagation in particular environments.

Motorola therefore supports a comprehensive review of the continued use of the R-6602 curves as a propagation prediction tool. Motorola recognizes, however, the significance and potential controversies that could arise through this analysis. For that reason, Motorola recommends that the Commission first address

the extension of the 40/20 dB cross-channel interference standard to all 800 and

multiple co-channel base stations, many of which are engineered as close to existing licensees' contours as possible. In particular, the SMR system designs based upon low power short-spaced stations arranged in cellular-like configurations place clusters of interfering sources around co-channel facilities. Also, many of these systems propose to use digital modulations schemes and other advanced technologies to pack more information and more users onto available channels.

Such conditions alter the operating paradigms that the industry has relied upon in the past for predicting interference protection. At this time, Motorola believes that adoption of a 40/22 dBu protection standard as outlined in the Joint Comments should provide adequate protection in most cases. However, further analysis and experience will likely prove that interference from multiple sources will degrade real world service from that predicted by any propagation model and that digital modulations will display different interference susceptibilities than analog transmissions.

In conclusion, Motorola strongly urges the Commission to quickly adopt the proposals for a new co-channel interference protection ratio as expressed in the Joint Comments. Although other changes to the technical assignment criteria for private land mobile stations may be necessary, such as replacing the R-6602 curves with a new propagation prediction model, the Commission should act on those matters on a separate regulatory track and not delay the adoption of the co-channel protection reforms.

MOTOROLA, INC